CLAIMS

What is claimed is:

1. A low noise laser control system comprising:

an optical sensor positioned to receive a portion of a light signal generated by the laser and produce a signal indicative of the laser beam generated by the laser; and

a noise reduction feedback network operatively connected to the optical sensor and to the laser, the noise reduction feedback network including filtering and impedance characteristics so as to produce a noise reduction signal which is provided to the laser.

2. The low noise laser control system of claim 1 further comprising a LF control loop operatively attached between the laser and the optical sensor to provide CW control of the laser.

3. The low noise laser control system of claim 2 further comprising a trans-impedance amplifier attached to an output of the optical sensor, the trans-impedance amplifier producing an amplified signal proportional to the optical sensor signal and providing the amplified signal to both the LF control loop and the noise reduction feedback network.

4. The low noise laser control system of claim 1 wherein the noise reduction feedback network is a series RCL circuit.

5. The low noise laser control system of claim 4 wherein the RCL circuit is configured to provide a band-pass function.

6. The low noise laser control system of claim 1 wherein the noise reduction feedback network is a high-pass transistor amplifier network.

7. The low noise laser control system of claim 3 wherein the LF control loop includes a processor attached to the trans-impedance amplifier, the processor further having an output attached to a laser driver which drives the laser, the processor output carrying a LF control signal which allows the laser driver to provide appropriate levels of current to operate the laser at a desired CW level.

8. The low noise laser control system of claim 7 wherein the noise reduction feedback network is a series RCL circuit.

9. The low noise laser control system of claim 7 wherein the noise reduction feedback network is a high-pass transistor amplifier network.

10. The low noise laser control system of claim 3 wherein the LF control loop includes an amplifier network attached to the output of the trans-impedance amplifier, the amplifier having an output attached to a laser driver which drives the laser, the amplifier output carrying a LF control signal which allows the laser driver to provide appropriate levels of current to operate the laser at a desired CW level.

11. The low noise laser control system of claim 1 further comprising a control switch to selectively operate the noise reduction feedback network.

12. A low noise laser control system for use in controlling a laser within a data storage drive, comprising:

an optical sensor associated with the laser to produce a sensor signal indicative of the laser beam being produced by the laser and directed toward a storage media;

an amplifier attached to an output of the optical sensor for producing an amplified signal which is inverted with respect to the sensor signal;

a noise reduction feedback network connected to the amplifier for receiving the amplified signal, the noise reduction feedback network further connected to the laser in

order to provide a filtered noise signal to the laser, wherein the filtered noise signal will cancel any noise present on the laser beam.

13. The control system of claim 12 wherein the noise reduction feedback network is a high pass high impedance network.

14. The control system of claim 12 wherein the noise reduction feedback network comprises a resistor, a capacitor, and an inductor all connected in series with one another.

15. The control system of claim 12 wherein the noise reduction feedback network comprises a transistor amplifier.

16. The control system of claim 12 wherein the optical sensor is a fast forward sense detector.

17. The low noise laser control system of claim 12 further comprising a control switch to selectively operate the noise reduction feedback network.

18 The control system of claim 12 wherein the noise reduction feedback network further comprises a disabling switch for tuning selectively disabling the feedback network.

19. The control system of claim 18 wherein the feedback network is disabled during writing operations of the data storage drive.

20. A laser control system attached to the read/write laser of an optical data storage system which is directed toward a data storage medium, the control system comprising:

a laser driver attached to the laser for providing a laser drive signal which controls the operation of the laser;

an optical sensor coupled to the laser to receive a portion of the laser signal produced by the laser and provide a sensor output proportional to the power of the laser signal;

an amplifier attached to the optical sensor for producing an amplified signal, the amplified signal being inverted and amplified when compared with the sensor output;

a processor attached to the amplifier and the laser driver, the processor receiving the amplified signal and producing a laser control signal to control the intensity level of the laser; and

a noise reduction feedback network coupled to the output of the amplifier and to the laser, the noise reduction feedback network receiving the amplified signal and providing a cancellation signal to reduce the noise in the laser signal directed to the optical medium.

21. The laser control system of claim 20 further comprising a switch operatively connected to the noise reduction feedback network to provide for selective generation of the cancellation signal.

22. The laser control system of claim 20 wherein the noise reduction feedback network is a high pass and high impedance network.

23. The laser control system of claim 20 wherein the noise reduction feedback network comprises a resistor, a capacitor, and an inductor all connected in series with one another.

24. The laser control system of claim 23 wherein the resistor, capacitor and inductor are configured to provide a band-pass function.

25. The laser control system of claim 20 wherein the noise reduction feedback network comprises a transistor amplifier.

26. The laser control system of claim 20 wherein the optical sensor is a fast forward sense detector.